What is claimed is:

1. A natural language interface control system
5 for operating a plurality of devices comprising:

a first microphone array;

a feature extraction module coupled to the
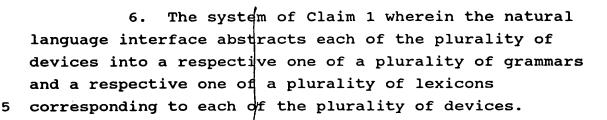first microphone array;

a speech recognition module coupled to the
10 feature extraction module, wherein the speech recognition
module utilizes hidden Markov models;

a natural language interface module coupled to
the speech recognition module; and

a device interface coupled to the natural
15 language interface module, wherein the natural language
interface module is for operating a plurality of devices
coupled to the device interface based upon non-prompted,
open-ended natural language requests from a user.

20 2. The system of Claim 1 further comprising
the plurality of devices coupled to the natural language
interface module.

3. The system of Claim 1 wherein the speech
25 recognition module utilizes an N gram grammar.

4. The system of Claim 1 wherein the natural
language interface module utilizes a probabilistic
context free grammar.

30 5. The system of Claim 1 wherein the
microphone array comprises a 3 dimensional microphone
array comprising a planar microphone array and at least
one linear microphone array located in a different plane
35 in space.

6. The system of Claim 1 wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexicons

5 corresponding to each of the plurality of devices.

7. The system of Claim 1 wherein the natural language interface module searches for the non-prompted, open-ended user requests upon the receipt and recognition

10 of an attention word.

8. The system of Claim 1 wherein the natural language interface module context switches grammars, acoustic models, and lexicons upon receipt and

15 recognition of an attention word.

9. The system of Claim 1 further comprising a grammar module for storing different grammars for each of the plurality of devices.
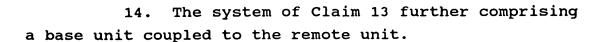
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10. The system of Claim 1 further comprising an acoustic model module for storing different acoustic models for each of the plurality of devices.

25 11. The system of Claim 1 wherein the device interface comprises a wireless device interface.

12. The system of Claim 1 further comprising an external network interface coupled to the natural

30 language interface control system.

13. The system of Claim 1 further comprising a remote unit containing the first microphone array, the feature extraction module, the speech recognition module,

35 and the natural language interface module.

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14. The system of Claim 13 further comprising
a base unit coupled to the remote unit.

15. The system of Claim 14 wherein the base
5   unit includes a second microphone array.

16. The system of Claim 15 wherein the
microphone array and the second microphone array
implement a 3 dimensional microphone array.
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17. A method of speech recognition comprising:
searching for an attention word based on a
first context including a first set of models, grammars,
and lexicons; and
15   switching, upon finding the attention word, to
a second context to search for an open-ended user
request, wherein second context includes a second set of
models, grammars, and lexicons.

20   18. A method of natural language control of
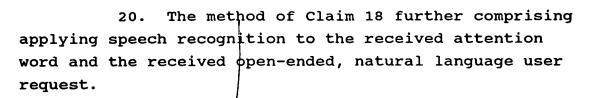one or more devices comprising:
receiving an attention word, wherein the
attention word indicates that an open-ended, natural
language user request will be received;
25   receiving the open-ended, natural language user
request;
matching the open-ended natural language
request with the most likely command corresponding the
open-ended natural language request; and
30   transmitting the command to a respective one of
the one or more devices.

19. The method of Claim 18 further comprising
switching, after receiving the attention word, to a
35   context for receiving open-ended natural language
requests.

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20. The method of Claim 18 further comprising applying speech recognition to the received attention word and the received open-ended, natural language user request.

21. The method of Claim 20 wherein the applying the speech recognition further comprises applying hidden Markov models to the open-ended, natural language user requests.

22. The method of Claim 18 wherein the matching comprises parsing the open-ended, natural language user request using probabilistic context free grammar (PCFG) rules.

23. The method of Claim 22 determining which of the one or more devices the open-ended, natural language user request is directed to.

24. The method of Claim 23 further comprising switching the context depending on the respective one of the one or more devices the open-ended, natural language user request is directed to.

25. A natural language control system for controlling one or more devices comprising:
means for receiving an attention word, wherein the attention word indicates that an open-ended, natural language user request will be received;
means for receiving the open-ended, natural language user request;
means for matching the open-ended natural language request with the most likely command corresponding the open-ended natural language request; and

means for transmitting the command to a
respective one of the one or more devices.

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